

Translation

PATENT COOPERATION TREATY

PCT/EP2003/014442



PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

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| Applicant's or agent's file reference 25371 WO | FOR FURTHER ACTION | See Form PCT/IPEA/416 |
| International application No. PCT/EP2003/014442 | International filing date (day/month/year) 18 December 2003 (18.12.2003) | Priority date (day/month/year) 18 December 2002 (18.12.2002) |
| International Patent Classification (IPC) or national classification and IPC C13D 1/08 | | |
| Applicant SÜDZUCKER AKTIENGESELLSCHAFT MANNHEIM/OCHSENFURT | | |

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
 - a. ☒ (sent to the applicant and to the International Bureau) a total of 3 sheets, as follows:
 - ☐ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
 - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
 - b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

- ☒ Box No. I Basis of the report
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

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|---|---|
| Date of submission of the demand 03 June 2004 (03.06.2004) | Date of completion of this report 21 March 2005 (21.03.2005) |
| Name and mailing address of the IPEA/EP | Authorized officer |
| Facsimile No. | Telephone No. |

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/EP2003/014442

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

- ☐ This report is based on translations from the original language into the following language _____, which is language of a translation furnished for the purpose of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

- ☐ The international application as originally filed/furnished
- ☒ the description:
- pages _____ 1-26 _____, as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☒ the claims:
- pages _____, as originally filed/furnished
- pages* _____, as amended (together with any statement) under Article 19
- pages* 1-12 received by this Authority on 28 January 2005 (28.01.2005)
- pages* _____ received by this Authority on _____
- ☒ the drawings:
- pages _____ 1/1 _____, as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP 03/14442

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | | |
|-------------------------------|--------|-------|-----|
| Novelty (N) | Claims | 1-12 | YES |
| | Claims | | NO |
| Inventive step (IS) | Claims | 1-9 | YES |
| | Claims | 10-12 | NO |
| Industrial applicability (IA) | Claims | 1-12 | YES |
| | Claims | | NO |

2. Citations and explanations

D1: US-A-3 477 873

D2: Joachim Hoffman, "Wie kommt der Zucker aus der Rübe?", Online 13/12/01.

1. The pH values in the originally submitted documents are indicated for a temperature of 20°C. The values indicated in claim 1 will be interpreted as corresponding thereto throughout the examination (PCT Article 6 and PCT Article 34(2)(b)).

It is not clear what meaning (PCT Article 6) "approx." has with respect to the limits of the claimed range of pH values.

2. D1 discloses a method (cf. D1, for example claim 5) for extracting ingredients from biological material (D1: column 1, lines 11-16), the biological material being pulped (D1, figure 1: pulping in 2 and 3), cell sap being separated from the pulped biological material (in 4; column 4, lines 52 and 53), the pulped biological material being treated by extraction (in 5) and the ingredients of the biological cell material thereby being obtained in the cell sap and in the extract.

The subject matter of claim 1 differs therefrom in that

- a) the pulping is carried out by means of electroporation, and
- b) the extraction treatment is carried out under alkali conditions.

The group of features a) enables a good yield of the ingredients of the biological material to be obtained at low temperatures, therefore requiring less energy. The pulping method defined by this group of features and its advantages are known (cf. D2), however, and therefore these distinguishing features do not, *per se*, involve an inventive step.

According to the applicant, however, the use of the pulping method according to a), in contrast to what is indicated and sought in D2, leads, during extraction, to the germination of the material to be processed. In order to prevent this, either the treatment temperature should be increased, which, at least, reduces the amount of energy saved, or the extraction treatment is carried out according to the group of features b) under alkali conditions, which enables the energy savings resulting from the group of features a) to be maintained. Since none of the available documents suggests this process, the groups of features a) and b) in combination can be regarded as involving an inventive step. Therefore, the valid claim 1 meets the requirements of PCT Article 33(2) and (3).

3. D1 discloses a device for extracting ingredients from biological material with a device 2,3 (reference signs refer to D1) for pulping the

material and an extractor 5, a continuous screw press 4 being arranged between the device for pulping 3 and the extractor (cf. also D1, column 10, lines 16-21) in order to receive the electroporated biological material, the outer casing of which is perforated.

The subject matter of claim 10 differs therefrom in that the device for pulping is a device for electroporation.

Electroporation as a method for pulping biological materials and the advantages associated therewith are, however, well known (see D2). Therefore, the teachings in D1 and D2 lead a person skilled in the art to the device according to claim 10, without him thereby having to be inventive.

Consequently, claim 10 does not meet the requirements of PCT Article 33(3).

4. The dependent method claims and claim 1, on which said claims are dependent, meet the requirements of PCT Article 33(2) and (3).
5. The features of the dependent device claims appear to be disclosed in the cited documents or to be a matter of standard practice for a person skilled in the art.